

SEARCH
CLAIMS:

1. A method for processing an initial image of coronary arteries, the initial image given by an intensity function $I(x,y)$ defined on a set of pixels (x,y) , so as to produce a processed image of the coronary arteries having an intensity function $I'(x,y)$, comprising steps of:
 - 5 (a) obtaining a function $z(x,y)$ describing a heart surface over the initial image; and
 - (b) calculating the intensity function I' based upon the function z .
- 10 2. The method according to Claim 1, wherein the function $z(x,y)$ describes an ellipsoidal surface over the initial image.
- 15 3. The method according to Claim 2 wherein the ellipsoidal surface has a first axis and a second axis coinciding with the length and width, respectively, of the heart in the initial image, and a third axis perpendicular to the image.
4. The method according to Claim 3 wherein the third axis has a predetermined constant times the length of the first or second axis.
- 15 5. The method according to Claim 4 wherein the predetermined constant is from about 0.3 to about 0.8 times the length of the first axis.
6. The method according to Claim 1 wherein $I'(x,y)$ is given by the algebraic expression

$$20 I'(x,y) = \left[\frac{z(x,y)}{\alpha} + 1 \right] I(x,y),$$

wherein α is a predetermined constant.

7. The method according to Claim 6, wherein α is from about 0.1 to about 5.
8. A method for processing a first initial digital image of coronary arteries and a second initial digital image of the coronary arteries, the first and second digital images having been obtained from different perspectives of the arteries, so as to produce a first processed image and a second processed image, the method comprising steps of:

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(a) processing the first initial digital image by the method of Claim 1;
and

(b) processing the second digital image by the method of Claim 1.

9. The method according to Claim 8 further comprising a step of presenting
5 the first and second processed images for stereoscopic viewing.

10. A computer program product comprising a computer useable medium
having computer readable program code embodied therein for processing an
initial image of coronary arteries, the initial image given by an intensity function
I(x,y) defined on a set of pixels (x,y), so as to produce a processed image of the
coronary arteries having an intensity function I'(x,y), the computer program
product comprising:

computer readable program code for causing the computer to obtain a
function z(x,y) describing a heart surface over the initial image; and

15 computer readable program code for causing the computer to calculate the
intensity function I' based upon the function z,

11. A program storage device readable by machine, tangibly embodying a
program of instructions executable by the machine to perform method steps for
processing a first initial digital image of coronary arteries and a second initial
digital image of the coronary arteries, the first and second digital having been
20 obtained from different perspectives of the coronary arteries, so as to produce a
first processed image and a second processed image, the method comprising steps
of:

(a) processing the first initial digital image by the method of Claim 1;
and

25 (b) processing the second digital image by the method of Claim 1.

12. A computer program product comprising a computer useable medium
having computer readable program code embodied therein for processing a first
initial digital image of coronary arteries and a second initial digital image of the
coronary arteries, the first and second digital images having been obtained from

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different perspectives of the coronary arteries, so as to produce a first processed image and a second processed image, the computer program product comprising:
computer readable program code for causing the computer to process the first initial digital image by the method of Claim 1; and
5 computer readable program code for causing the computer to process the second digital image by the method of Claim 1.

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